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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,011	07/31/2003	Francesc Subirada	600111683-1	9373

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EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 02/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,011

Applicant(s)

SUBIRADA ET AL.

Examiner

Hai C. Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 7-13 and 15-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/29/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-6 and 14 in the reply filed on 01/10/05 is acknowledged.

With regard to claims 15 and 16, which were not addressed by the restriction requirement, it is noted that the above-mentioned claims 15 and 16 belong to Group III, directed to the "media border/type detection method", that also encompasses claims 17-25.

2. Therefore, claims 7-13 and 15-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 01/10/05.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

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disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because **(a)** the abstract fails to narrate the claimed invention within the suggested range of 50 to 150 words and **(b)** the content of the abstract is not tailored to the currently selected invention. Correction is required. See MPEP § 608.01(b).

Claim Objections

5. Claim 1 is objected to because of the following informalities:
- Line 10, "a service area" should read --the service area-- since the claimed limitation has been recited earlier within the claim.
- Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maza et al. (U.S. 6,164,753) in view of Gudaitis et al. (U.S. 6,659,578).

Maza et al. discloses a method of calibrating an optical sensor (17) of a color image forming device, said image forming device including a traversing carriage (printer

carriage 10) supporting said optical sensor and a plurality of different color ink print heads (18) (Fig. 3), the traversing carriage movable over a print area during normal printing operations and over a service area of the image forming device for service operations, the method comprising positioning a prefabricated optical sensor target (formed by the insert 70 and the mount 71) at the service area of the image forming device, the target including a plurality of target patches of predetermined different colors (the insert section 70 defines a rectangular reference mark 76 defining a black pattern of the mount 71 surrounded by the white bands of the insert section 70) (col. 7, lines 1-20), moving the carriage to the service area of the image forming device (the optical sensor 17 scanning past the reference mark 76 provided by the insert section 70), acquiring one or more images of said plurality of target patches (Figs 15A-B), using the one or more images to perform a calibration of the optical sensor (e.g., determination of the location of the optical sensor 17 and thus the printer carriage 10 relative to the service station).

With regard to claim 14, Maza et al. further teaches moving the carriage to the service area (the optical sensor 17 scanning past the reference mark 76 provided by the insert section 70), generating a light beam from a carriage-mounted light source (LEDs 428, 430) at a position adjacent an end of the sensor (photocell 420), the light beam at an acute angle relative to an array axis (Fig. 12), reflecting the beam from a reference target mounted in the service area at a known position, acquiring an image of the reflected beam by the sensor (Figs. 15A-B), and using the location of a high intensity area of the image to determine said reference position of the optical sensor (the

determination of the position of the optical sensor relative to the service station is based on the determination of the location of the transition from the low intensity area to the high intensity area as the optical sensor scans past the black pattern target member to the white target member).

However, Maza et al. fails to teach performing more than one type of calibrations of the optical sensor (claim 1), which includes sensor pixel response uniformity and dynamic range (claim 2), sensor color calibration (claim 3), and the linear sensor array (claim 14).

Gudaitis et al. discloses a tuning system and method for a compact optical sensor of a color image forming device (20), said image forming device including a traversing carriage (printer carriage 40) supporting said optical sensor (100), which consist of a plurality of light sources (LEDs 120, 122, 124 and 126) and an array of photodiodes (108, 110), and a plurality of different color ink print heads (Fig. 1), the traversing carriage movable over a print area (printzone 25) during normal printing operations and over a service area (servicing region 42) of the image forming device for service operations, the method comprising positioning a prefabricated optical sensor target (replaceable white calibrating reference target 370) at the service area of the image forming device, moving the carriage to the service area of the image forming device (col. 16, lines 3-15), wherein the optical sensor scans the replaceable target member (370) so as to perform a plurality of calibrations that includes sensor pixel response uniformity and dynamic range (e.g., to achieve desired shade, consistency or intensity of the resulting image) (col. 11, lines 1-32). Gudaitis et al. further teaches

performing sensor color calibration (the replaceable calibrating target member 370 may include any particular color sample (col. 14, lines 24-39).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Maza et al. to incorporate the various calibration types as taught by Gudaitis et al. The motivation for doing so would have been to allow the optical sensor to perform a high calibration process so as to produce a high quality image.

8. Alternatively, claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maza et al. in view of Baker et al. (U.S. 6,832,824).

Maza et al. discloses all the basic limitations of the claimed invention except for performing more than one type of calibrations of the optical sensor (claim 1), which includes sensor pixel response uniformity and dynamic range (claim 2), sensor color calibration (claim 3).

Baker et al. discloses a color calibration sensor system used in a printing device, wherein the reference target member is provided in the service area, the target member including a plurality of target patches of white color (white target 1262'), black color (black target 1264), and a neutral gray target (target 1265) and color targets including the three primary colors (targets 1266), and wherein a plurality of calibrations are performed including the color calibration, sensor pixel response uniformity and dynamic range (e.g., measuring the color properties of the three primary colors, the condition of the ink drop placing module) (col. 24, lines 3-48).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Maza et al. to incorporate the various calibration types as taught by Baker et al. The motivation for doing so would have been to allow the optical sensor to perform a high calibration process so as to produce a high quality image.

9. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maza et al. in view of Baker et al., as applied to claim 1 above, and further in view of Scheuer (U.S. 6,385,408).

Maza et al., as modified by Baker et al., discloses all the basic limitations of the claimed invention except for the strips having a longitudinal extent at least as long as the sensor field of view.

Scheuer discloses an optical sensor for controlling the various system parameters of the image printing system, wherein the test patch (140) is formed such that its longitudinal side is at least as long as the sensor field of view (138) (Fig. 6) such that the optical sensor can accurately detect the information contained in the test patch by fully locating the test patch.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to arrange the sensor field of view relative to the size of the target member of the device of Maza et al. as taught by Scheuer. The motivation for doing so would have been to allow the optical sensor to accurately detect the

information contained in the test patch by fully locating the test patch as suggested by Scheuer at col. 6, lines 7-27.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maza et al. in view of Gudaitis et al., as applied to claim 1 above, and further in view of Sievert et al. (U.S. 5,796,414).

Maza et al., as modified by Gudaitis et al., discloses all the basic limitations of the claimed invention except for the target including a plurality of spaced fiducial marks, and said plurality of calibrations including determining an angular position of the target relative to the sensor.

Sievert et al. discloses a method for determining a positional deviation of the print heads by scanning the sensor across a test pattern having diagonal stripes whose angular orientation relative the scanning direction of the sensor allow to determine the misregistration of the print heads in both main and sub-scanning directions.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the target pattern in the device of Maza et al. as diagonal stripes as taught by Sievert et al. for the purpose of determining the positional deviation of the print heads in both main and sub-scanning directions.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**HAI PHAM
PRIMARY EXAMINER**

February 18, 2005